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L1: Entry 3 of 13 File: JPAB Sep 30, 1997

PUB-NO: JP409255954A
DOCUMENT-IDENTIFIER: JP 09255954 A
TITLE: LIQUID CRYSTAL DEVICE, ITS PRODUCTION AND LIQUID CRYSTAL DISPLAY USING THE SAME

PUBN-DATE: September 30, 1997

INVENTOR-INFORMATION:
NAME COUNTRY
KURIYAMA, TAKESHI
NAKADA, HIDETOSHI
OGAWA, HIROSHI
TAKEUCHI, KIYOBUMI
FUJISAWA, NOBURU

INT-CL (IPC): C09 K 19/42; C09 K 19/18; C09 K 19/30; C09 K 19/54; G02 F 1/13

ABSTRACT:

PROBLEM TO BE SOLVED: To obtain a liquid crystal device having improved display characteristics, markedly improved heat resistance and high reliability by using at least two specified compounds and a transparent solid substance as the liquid crystal material of a light scattering liquid crystal device.

SOLUTION: This device contains a liquid crystal material comprising compounds respectively selected from at least two of the three groups of compounds represented by formulas I, II and IV (R11 is a 2-7C alkyl or an alkoxyl; R12 is a 2-7C alkyl or alkenyl or a group of formula III; R13 is a 2-7C alkyl or alkenyl; R14 is a 1-7C alkyl, alkoxyl, alkenyl or alkenyloxy; X11 and X14 are each F, Cl, trifluoromethoxyl, trifluoromethyl, a 1-5C alkyl or an alkoxyl; X12, X13, X15, X16, Y1 to Y4, Y6 and Y7 are each H or F; Y5 is M, F or methyl; Z is a single bond, -COO-, -C2H4- or -C4H8-; (n) and (r) are each 0 or 1; and (p) and (q) are each 1-5) and a transparent solid substance obtained by polymerizing a compound represented by formula V (R41 and R42 are each H or methyl; and R1 is a 6-50C alkylene).

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L1: Entry 2 of 13 File: JPAB Feb 17, 1998

PUB-NO: JP410045642A
DOCUMENT-IDENTIFIER: JP 10045642 A
TITLE: LIQUID CRYSTAL COMPOUND WITH EXTREMELY HIGH DIELECTRIC CONSTANT ANISOTROPY

PUBN-DATE: February 17, 1998

INVENTOR-INFORMATION:
NAME COUNTRY
OSAWA, MASASHI
TAKEHARA, SADAO
TAKATSU, HARUYOSHI

INT-CL (IPC): C07 C 25/24; C07 C 43/225; C07 C 255/50; C09 K 19/18; G02 F 1/13

ABSTRACT:

PROBLEM TO BE SOLVED: To obtain a new liquid crystalline compound having both high refractive index anisotropy and dielectric constant anisotropy, thus useful as a material for practicable liquid crystal display requiring quick response and low-voltage driving.

SOLUTION: This liquid crystal compound is shown by formula I (R is a 1-10C alkyl; Y1 to Y6 are each H or F, at least four of them being F; Z is F, Cl, OCF3 OCHF2, CF3, CN, a 1-10C alkyl or alkoxyl), e.g. 4-(4-propyl-2,6-difluorophethyl)ethynyl-1-(3,4,5-trifluorophenyl)ethynyl-2,6-difluorobenze ne. The compound of formula I is obtained by the following process: the para-site relative to the R group of a compound of formula II is brominated originated, the resultant compound if then reacted with a compound of formula III to form a product which is then brominated or iodinated again to produce a compound of formula IV (Q2 is Br or I), which, in turn, is reacted with a compound of formula V.

L1: Entry 4 of 13 File: JPAB Aug 13, 1996

PUB-NO: JP408209130A
DOCUMENT-IDENTIFIER: JP 08209130 A
TITLE: NEMATIC LIQUID CRYSTAL COMPOSITION AND LIQUID CRYSTAL DISPLAY CONTAINING THE SAME

PUBN-DATE: August 13, 1996

INVENTOR-INFORMATION:

NAME	COUNTRY
TAKEUCHI, KIYOBUMI	
FUKUSHIMA, YURIKO	
TAKATSU, HARUYOSHI	

INT-CL (IPC): C09 K 19/42; C09 K 19/30; C09 K 19/46; G02 F 1/13

ABSTRACT:

PURPOSE: To obtain a nematic liquid crystal composition having a high birefringent index, showing a nematic phase in a wide temperature range and having a high voltage retention and high chemical stability by using two specified compounds as the essential components.

CONSTITUTION: This composition is prepared by using compounds of formulas I and II (wherein R1 and R2 are a 2-7C linear alkyl or alkenyl or a group of formula III; (p) and (q) are each 1-5; (k) is 0 or 1; X1 to X4 are each H or F, provided that at least one of X1 to X3 is F; and Y1 is a 2-7C linear alkyl, alkoxy, -OCF3, -CF3 or F) (e.g. compounds of formulas IV and V) as the essential components. This composition can give a liquid display reduced in the flickering, cross-talking, etc., of the display screen. Owning to its high birefringence, the thickness of the liquid crystal layer can be reduced, which can give an improved response. It can provide good drive characteristics and display characteristics when used in especially a twisted nematic liquid crystal device of a high amount of information.

L1: Entry 5 of 13 File: JPAB Mar 26, 1996

PUB-NO: JP408081680A
DOCUMENT-IDENTIFIER: JP 08081680 A
TITLE: NEMATIC LIQUID CRYSTAL COMPOSITION AND LIQUID CRYSTAL DISPLAY DEVICE

PUBN-DATE: March 26, 1996

INVENTOR-INFORMATION:

NAME	COUNTRY
TAKEUCHI, KIYOBUMI	
FUKUSHIMA, YURIKO	
TAKATSU, HARUYOSHI	

INT-CL (IPC): C09 K 19/42; C09 K 19/30; G02 F 1/13

ABSTRACT:

PURPOSE: To obtain a nematic liquid crystal composition, comprising specific two kinds of components, capable of manifesting a nematic phase within a wide temperature range and keeping the nematic liquid crystallinity for a longer period even by preservation at low temperatures for a long period and having a low threshold voltage and high chemical stability.

CONSTITUTION: This composition comprises (A) a compound selected from compounds of formulas I and II {R11 is a 2-7C linear alkyl, CpH2p+1OCqH2q [(p) and (q) are each 1-5], etc.; R12 is a 2-7C linear alkyl or an alkenyl; X11 and X12 are each H or F; Y11 is F, Cl, etc.; at least either of Z11 and Z12 is a single bond and the other is a single bond, C2H4, etc.; (f) is 0 or 1} and (B) a compound selected from compounds of formulas III and IV [R21 and R23 are each a 2-7C linear alkyl or an alkenyl; X21 and X23 are each H or F; (g) is 0 or 1], etc. At least one of the components (A) and (B) is a compound obtained by replacing at least one of H atoms in 1,4-cyclohexylene with deuterium atom. Furthermore, 30-85wt.% component (A) and 5-70wt.% component (B) are respectively preferably used in the composition.